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Signature

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Patent Application Of: Gan et al.

For: Efficient Electrode Assembly Design For Cells With Alkali  
Metal Anodes

the specification of which is being transmitted herewith

Assistant Commissioner of Patents  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

**Pursuant to 37 CFR 1.56**

1. Applicants submit herewith patents, publications or other information of which they are aware, which they believe may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR 1.56.

The filing of this Information Disclosure Statement (IDS) shall not be construed as a representation that a search has been made (37 CFR 1.56(g)), an admission that the information cited is, or is considered to be material to patentability or that no other material information exists.

The filing of this IDS shall not be construed as an admission against interest in any manner (Notice of Jan. 9, 1992, 1135 O.G. 13-25, at 25).

2. Attached is Form PTO-1449.

3. A concise explanation of the possible relevance of the listed information items is as follows:

IDS For: Efficient Electrode Assembly Design For Cells With  
Alkali Metal Anodes  
Inventor: Gan et al.

**Patents:**

U.S. Patent No. 5,631,102 to Spillman et al. shows a cell having a cylindrically shaped spirally wound electrode stack housed within a conductive casing, which may have a case negative configuration. The anode electrode 16 comprises a pair of elongated ribbon-like anode active elements 24 and 26 pressed together against opposite sides of a current collector 20. An additional separator insert 40 is provided to cover an edge of the cathode. The separator insert extends along the cathode a distance less than one-half the length thereof to prevent the covered portion of the cathode in contact with the anode from tearing through the separator and the separator insert.

U.S. Patent Nos. 4,830,940 and 4,964,877, both to Keister et al. describe prismatic batteries having an anode 42 enclosed within separator material and folded into a serpentine shape. Cathode plates are then received within the folds of the anode electrode.

U.S. Patent No. 5,254,415 to Williams et al. shows a stacked cell array bipolar battery wherein a plurality of individual cells are stacked in an array with electrically-opposing electrode ends. Electrically conductive metal end plates are in contact with the electrode ends of the array and each cell includes a pair of electrically-opposite electrodes in contact with and separated by a central separator. The array includes at least one current collector between and in electrical contact with adjacent electrodes of adjacent cells. The entire battery is provided with first and second thermal-sprayed electrode resistant ceramic materials acting as sealants.

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U.S. Patent Nos. 5,618,318 to Reddy et al. and 5,667,909 to Rodriguez et al. show batteries wherein efficiency in stacking opposing electrodes is accomplished by folding at least one of the electrodes. The Reddy et al. patent includes a foldable cathode and anode. Tabs are provided at opposite ends of the electrodes so that when the folded electrode structure is completed, these tabs may be connected to electrical feedthroughs incorporated into the cell case.

U.S. Patent No. 3,885,991 to Finkel shows an electrochemical cell including a can or outer case 12, an anode material 24, an insulating separator 26 and a cathode material 28, wherein the anode and cathode materials are layered upon each, segregated by an insulating separator, to provide an electrode assembly which is wound and contained within the can. The anode is connected to the bottom of the can through a spot welded connecting strip. The cathode material is connected to an external cathode contact through a wire.

U.S. Patent No. 4,687,717 to Kaun et al. relates to a bipolar battery comprising a plurality of individual cells having electrodes in a face-to-face stacked array with electrically opposite electrode ends and electrically conductive end face caps in contact with the electrode ends of the array. Each cell is isolated from adjacent cells and presumed not to be in direct contact with the surrounding housing.

U.S. Patent No. 5,595,839 to Hossain shows a lithium-ion battery incorporating unitary bipolar structures having electrically-insulating seal members in the form of plastic insulating rings joined together in a sealed stacked array.

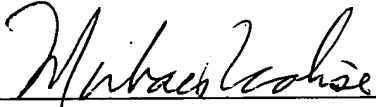
IDS For: Efficient Electrode Assembly Design For Cells With  
Alkali Metal Anodes  
Inventor: Gan et al.

U.S. Patent No. 5,441,824 to Rippel shows a battery comprising a cell stack lacking an outer casing altogether.

4. The remaining patents on the attached Form PTO 1449 are discussed in the specification of this application.

5. The person making this statement is the agent who signs below, who makes this statement on the information supplied by the inventors and the information in the agent's file.

Respectfully submitted,

By:   
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PTO/SB/08A(08/00)

Approved for use through 10/31/2002, OMB 0651-0031

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT***(Use as many sheets as necessary)*

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>				Application Number		
				Filing Date		March 23, 2004
				First Named Inventor		Gan et al.
				Group Art Unit		
				Examiner Name		
Sheet	5	of	5	Attorney Docket Number		37505.0239

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. 1	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code 2 (if known)			
	1	5,147,737		Post et al.	09-15-1992	
	2	5,439,760		Howard et al.	08-08-1995	
	3	5,595,839		Hossain	01-21-1997	
	4	4,687,717		Kaun et al.	08-18-1987	
	5	5,441,824		Rippel	08-15-1995	
	6	3,885,991		Finkel	05-27-1975	
	7	5,667,909		Rodriguez et al.	09-16-1997	
	8	5,618,318		Reddy et al.	04-08-1997	
	9	4,830,940		Keister et al.	05-16-1989	
	10	4,964,877		Keister et al.	10-23-1990	
	11	5,254,415		Williams et al.	10-19-1993	
	12	6,551,747B1		Gan	04-22-2003	
	13	5,631,102		Spillman et al.	05-20-1997	
	14	6,645,670B2		Gan	11-11-2003	
	15	5,716,422		Muffoletto et al.	02-10-1998	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. 1	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T6
		Office3	Number4	Kind Code5 (if known)				

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Unique citation designation number. 2 See attached Kinds of U.S. Patent Documents. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.